LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES

OFFICE OF FISHERIES
INLAND FISHERIES SECTION

PART VI -A

WATERBODY MANAGEMENT PLAN SERIES

CHATHAM LAKE

LAKE HISTORY & MANAGEMENT ISSUES

CHRONOLOGY

DOCUMENT SCHEDULED TO BE UPDATED EVERY FIVE YEARS

January 2009 – Prepared by
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Update – January 2014 – Prepared by
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LAKE HISTORY

GENERAL INFORMATION

Shoreline length
3.4 miles

Average depth
5 feet

Maximum depth
10 feet

Natural seasonal water fluctuation
1 to 2 feet

Parish
Jackson

Date Lake formed
1952

Impoundment
Edwards Branch (tributary of Castor Creek)

Size (surface area)
158 acres

Watershed
10,229 acres drain into Chatham Lake.
The ratio of watershed to lake surface is large at 64.7 to 1.
Watershed characteristics: Commercial pineland forest, upland hardwood, pasture, rural residential. Soil is acidic, sandy, and infertile. Soil alkalinity and pH are low.

Pool Stage
Surface elevation of Chatham Lake is set at the spillway weir elevation of 165 MSL.

Spillway width
Spillway dam structure – total weir length – 150 feet.

Drawdown description
Gate Size – 18" slide gate with 18" diameter pipe
Number of gates - 1
Condition – good – new gate installed August, 2007

Who controls

Louisiana Department of Transportation and Development is responsible for the maintenance and operation of the Chatham Lake spillway.

LAKE AUTHORITY

Association

The Jackson Parish Watershed District shall consist of seven commissioners, each of whom shall be a qualified elector of the State of Louisiana who resides within the limits of Jackson Parish. The commissioners shall be appointed by the Jackson Parish Police Jury and serve terms of 4 years and until their successors have been appointed and have been qualified. The members are listed in Table 1. Any vacancy in the office of commissioner, due to death, resignation or any other cause shall be filled by an appointment of the Jackson Parish Police Jury.

Table 1. Members of Jackson Parish Watershed District Board of Commissioners as of January 2014.

Name	Address	Term Expires
Rayo Baker	288 Ed Peevy Rd. Jonesboro, LA 71251	3-9-2017
Tommy Chatham	2606 Hwy. 499 Chatham, LA 71226	6-27-2016
Dennis Clary	156 Pine Hill Road Quitman, LA 71268	5-12-2017
James Edwin Davis	1383 Riser Road Ruston, LA 71270	4-7-2017
Billy Moore	4480 Highway 505 Jonesboro, LA 71251	1-13-2017
Lavelle Smith (Chairman)	154 Easy St. Chatham, LA 71226	4-11-2015

Authorization

JPWD created in 1972 by LA R.S. 38:2900 as political subdivision and budgetary unit. LA R.S. 38:2900 creates the Jackson Parish Watershed District, out of the watershed of all streams located in Jackson Parish, and more particularly defined as all of Jackson Parish, Louisiana. The Jackson Parish Watershed District shall be an agency of the State of Louisiana and a budgetary unit thereof, which shall have as its purpose the conservation of soil and water, developing the natural resources and wealth of the district for sanitary, agricultural and recreational purposes, as the same may be conductive to the public health, safety, convenience or welfare or of public utility or benefit of the citizens of the State of Louisiana.

The Jackson Parish Game and Fish Preserve purchased property and acquired servitudes for

the creation of Chatham Lake for a recreational fishery.

ACCESS

Boat Docks

The Chatham Public Boat Ramp is open to the public and is free of charge. The concrete ramp was renovated in late 2007. The location of the ramp is indicated on map in **APPENDIX I**.

Piers

There are a few (<5) privately owned piers associated with shoreline properties. One public fishing pier was constructed on the south side of the lake in 2006 (Figure 1).

Figure 1. Public fishing pier on Chatham Lake, LA.

State/Federal facilities

Two picnic areas were constructed in 2006.

SHORELINE DEVELOPMENT

The Chatham Lake shoreline is primarily residential, but lightly developed. No commercial marinas are in operation.

EVENTS / PROBLEMS

Chatham Dam Leakage

July, 1998 - Letter from Mr. Mike Aghayan, Chief of DOTD Dam Safety, indicated that Chatham Lake Dam required immediate attention. DOTD personnel that inspected the dam were not able to determine the extent of damages. They suspected that the metal sliding gate (approx. 3' X 3') had deteriorated and was leaking (Figure 2). Funding was secured for the repairs by Rep. Jim Fannin through Rural Development Funds in 2006. The spillway gate was replaced in 2007.

Because a drawdown was required for spillway repairs, renovation of the existing fish population and improvements to the boat ramp were planned to coincide with the project.

Figure 2. Control structure on Chatham Lake, LA prior to repairs being performed in 2007.

MANAGEMENT ISSUES

AQUATIC VEGETATION

Complex Cover in Chatham Lake consists of aquatic vegetation and bald cypress (*Taxodium distichum)* trees. The upper half of the lake is shallow with scattered cypress trees in the center of the lake and patches of aquatic vegetation that transition to a cypress forest near the headwaters (Figure 3). Much of the timber on the lower half of the lake was cut prior to impoundment. Therefore, complex cover in this part of the lake can only be found in the littoral zone and consists of a fringe of emergent vegetation and cypress trees.

Figure 3. Typical habitat in the upper end of Chatham Lake, LA.

The upper half of Chatham Lake is very shallow (less than 3 feet) and aquatic vegetation has been problematic for many years. Historically, the shallow water areas of the lake are covered annually with submerged aquatic vegetation including fanwort (*Cabomba caroliniana*), bladderwort (*Utricularia spp.*), coontail (*Ceratophyllum demersum*), parrot feather (*Myriophyllum aquaticum*), and naiad (*Najas spp.*) Common emergent vegetation present includes water primrose (*Ludwigia octovalvis*), alligator weed (*Alternanthera philoxeroides*), and water lily (*Nymphaea spp.*). Emergent vegetation is typically found in a fringe around the lake and intermingled with submerged vegetation throughout the shallow areas of the lake. Historically, water hyacinth (*Eichhornia crassipes*) and duckweed (*Lemna spp.*) have been the predominant floating plant species.

Common salvinia (*Salvinia minima*) was first observed in Chatham Lake in 2003 during observations made in conjunction with daytime electrofishing sampling. In August of 2004, it was observed to cover approximately 10 acres. Control efforts included foliar herbicide applications by LDWF spray crews and a three foot drawdown for habitat improvement in 2004. Common salvinia was not observed again until 2006. It is currently found in the lake but has not become problematic.

Aquatic Vegetation Surveys

Surveys to estimate aquatic vegetation coverage were performed in 2005, 2012, and 2013. The results of these surveys can be found in **APPENDIX II** – Aquatic Vegetation Surveys.

Aquatic Vegetation Treatment History

Foliar herbicide applications for control of nuisance aquatic vegetation are made periodically by LDWF spray crews. Herbicide applications made from 2006 through 2013 are listed in Table 2.

Table 2. Herbicide applications in Chatham Lake, LA 2006 – 2013.

Treatment Year	Primary Plant Species	Herbicides Used	Acres Treated
2006	Alligator weed, primrose	Aqua Neat – 13 gals. (0.75 gal/acre)	17
2008	Alligator weed, primrose	2,4-D - 3 gals. (1 gal/acre) Reward – 24 gals. (1 gal/acre)	27
2009	Alligator weed, primrose, common salvinia	Aqua Master – 26 gals. (0.75 gal/acre) Diquat E Pro 2 L – 16 gals. (1 gal/acre) Knockout – 13 gals. (1 gal/acre) Reward – 20 gals (1 gal/acre)	83
2010	Alligator weed, duckweed, parrot feather, pennywort	Aqua Master – 8 gals. (0.75 gal/acre) Knockout – 32 gals. (1 gal/acre) Platoon – 12 gals. (0.5 gal/acre)	67
2011	Alligator weed, primrose, common salvinia,	Aqua Master – 2 gals (0.75 gal/acre) Clearcast – 1 gal (0.33 gal/acre) Knockout – 13 gals. (1 gal/acre) Tribune – 5 gals. (1 gal/acre)	24
2013	common salvinia	Tribune – 10 gals. (1 gal/acre)	10

HISTORY OF REGULATIONS

Recreational

Statewide regulations have been in effect for all fish species, since the creation of the lake. Recreational fishing regulations may be viewed at the link below:
http://www.wlf.louisiana.gov/fishing/regulations

Commercial

Statewide regulations have been in effect for all fish species, since the creation of the lake. Commercial fishing regulations may be viewed at the link below:
http://www.wlf.louisiana.gov/fishing/regulations

DRAWDOWN HISTORY

Drawdowns were conducted in 1967 and 1975 for the purpose of aquatic vegetation control. A drawdown conducted in the fall of 2004 was for aquatic vegetation control, and for aeration of shallow substrate. The lake was completely dewatered in 2007 for repairs to the control structure and renovation of the lake. Details of the drawdowns are found in Table 3.

Table 3. Drawdown history of Chatham Lake, LA.

YEAR	PURPOSE	SUCCESS	FISHING CLOSURE	DEPTH	% EXPOSED	FISH KILL
1967	Vegetation Control	?	Yes	6 ft	100%	Yes
1975	Vegetation Control	?	?	5 ft	80%	?
2004	Habitat Improvement	Moderate	No	3 ft	50%	No
2007	Renovation of lake, repairs to control structure	Yes	Yes	6 ft	100%	Yes

Drawdown Dates

Drawdowns conducted in fall – typically after Labor Day through mid winter.

FISH KILLS / DISEASE HISTORY, LMBV

No kills recorded due to poor water quality or toxins.

CONTAMINANTS / POLLUTION

Water quality

http://www.deq.state.la.us/ Routine DEQ sampling discontinued in 1999.
No fish consumption or swimming advisories issued.

BIOLOGICAL

Fish and aquatic vegetation sampling

The Louisiana Department of Wildlife and Fisheries has conducted standardized sampling on Chatham Lake beginning in 2002. Sampling has been increased following the renovation project in 2007. Sampling history and planned sampling through 2017 is listed in Table 4.

Table 4. Schedule of sampling for Chatham Lake, LA.

CHATHAM LAKE SAMPLING	
Note: All sampling conducted as per LDWF Standardized Sampling Guidelines.	
2002	Gill Netting – 1 24 hour sample with each of the following: • 300' 2.5 in. bar. • 300' 3.0 in. bar. • 300' 3.5 in. bar • 300’ 4.0 in. bar
2003	Electrofishing 4-15 minute samples (daytime – November)
2005	Aquatic Vegetation Survey
2008	Aquatic Vegetation Survey
2009	Electrofishing 2-15 minute samples (Summer) Shoreline seining
2010	Electrofishing 2-15 minute samples (Summer) Shoreline seining
2011	Electrofishing 2-15 minute samples (Summer) and 1 -15 minute forage sample Aquatic Vegetation Survey
2013	Electrofishing 3-15 minute samples (Summer) and 3- 300 second forage samples Aquatic Vegetation Survey
2014	Electrofishing 2-15 minute samples (Spring) ; 2-15 minute samples (Fall) and 2-450 second forage samples Lead nets – 1 stations (2 nets)
2015	No fisheries sampling planned Aquatic Vegetation Survey
2016	No fisheries sampling planned
2017	Electrofishing 2-15 minute samples (Spring) ; 2-15 minute samples (Fall) and 2-450 second forage samples Lead nets – 1 stations (2 nets) Aquatic Vegetation Survey

Lake records

The Louisiana Outdoor Writers Association (LOWA) is the official curator of fish records for the State of Louisiana. No lists are kept specifically for Chatham Lake. Complete information regarding Louisiana fish records is included in the attached site: http://www.laoutdoorwriters.com/Records/LouisianaFishRecords/tabid/87/Default.aspx

Stocking History

Prior to the lake renovation project in 2007, the dominate species stocked into Chatham Lake was channel catfish. The stocking history from 1971 to 2012 is found in Table 4.

Table 4. Stocking history of Chatham Lake, LA from 1971 to 2012.

DATE	NUMBER / SPECIES STOCKED
1971	4,000 bluegill fingerlings
1997	904 blue catfish adults
1998	5,000 channel catfish fry
1999	9,982 channel catfish fingerlings
2000	15,525 channel catfish fingerlings
2005	1,760 Florida largemouth bass fingerlings
2007	136,250 sunfish fingerlings – 75% bluegill, 25% redear 420 channel catfish fingerlings
2008	1,500 threadfin shad 25,748 Florida largemouth bass fingerlings 6,975 black crappie (blacknose)
2010	2,500 channel catfish fingerlings
2012	159,492 redear fingerlings

Species profile

A rotenone application was made in August, 2007 to remove all fish in Chatham Lake in preparation for re-stocking. The species observed are listed in Table 5.

Table 5. List of indigenous freshwater fishes found in Chatham Lake, LA during rotenone application for lake renovation efforts in 2007.

Gar Family, LEPISOSTEIDAE
Spotted gar, *Lepisosteus oculatus* (Winchell)
Herring Family, CLUPEIDAE
Gizzard shad, *Dorosoma cepedianum* (Lesueur)
Threadfin shad, *Dorosoma petenense* (Günther)
Freshwater Catfish Family, ICTALURIDAE
Yellow bullhead, *Ameiurus natalis* (Lesueur)
Pike Family, ESOCIDAE
Chain pickerel, *Esox niger* Lesueur
Pirate Perch Family, APHREDODERIDAE
Pirate perch, *Aphredoderus sayanus* (Gilliams)
Killifish Family, CYPRINODONTIDAE
Golden topminnow, *Fundulus chrysotus* (Günther)
Blackspotted topminnow, *Fundulus olivaceus* (Storer)
Livebearer Family, POECILIIDAE
Western mosquitofish, *Gambusia affinis* (Baird and Girard)
Silverside Family, ATHERINIDAE
Brook silverside, *Labidesthes sicculus* (Cope)
Sunfish Family, CENTRARCHIDAE
Green sunfish, *Lepomis cyanellus* Rafinesque
Warmouth, *Lepomis gulosus* (Cuvier)
Bluegill, *Lepomis macrochirus* (Rafinesque)
Longear sunfish, *Lepomis megalotis* (Rafinesque)
Redear sunfish, *Lepomis microlophus* (Günther)
Northern largemouth bass, *Micropterus salmoides salmoides* (Lacépède)
Black crappie, *Pomoxis nigromaculatus* (Lesueur)

Largemouth Bass Genetics
No genetics sampling conducted to date.

Threatened/endangered/exotic species
None identified.

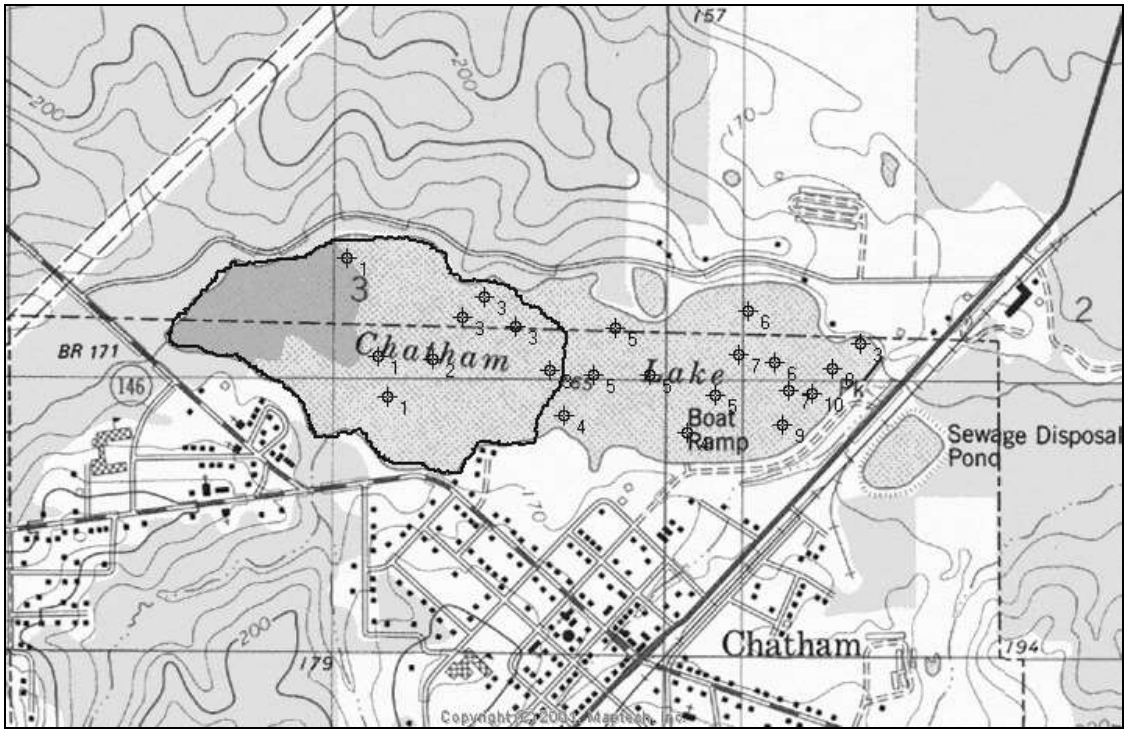
CREEL

Historic Information/Type
No angler surveys conducted to date.

WATER USE
Skiing, Swimming, and Fishing.

APPENDIX I
(return to access)

Chatham Lake Map



Map of Chatham Lake indicating depths of points at pool stage.

APPENDIX II

(Return to surveys)

Aquatic Vegetation Surveys

Chatham Lake Aquatic Vegetation Survey
August 22, 2005

L.D.W.F. Inland Fisheries personnel Ryan Daniel and Randy Lively performed a vegetation survey of Chatham Lake on August 22, 2005 for the purpose of constructing an aquatic type map. The lake level at the time of the survey was approximately 18 inches below pool stage due to evaporation and low amounts of rainfall. The east (spillway) end of the lake was mostly void of aquatic vegetation. There were some isolated water hyacinths on dry ground along the dam and around the fishing pier. There was also some alligator weed growing on the dam but not extending into the water. Filamentous algae was also observed growing in shallow water adjacent to the shoreline for much of the area around the dam but was not at problematic levels. Scattered small patches of alligator weed and water primrose were seen along the north and south banks in the mid portion of the lake. The majority of the vegetation in the lake is located on the western end which is mostly less than 3 ft. deep and scattered with clumps of cypress. Emerged vegetation includes water primrose and alligator weed forming large mats near the far west end. Submerged species include filamentous algae, small amounts of slender naiad, and scattered coontail. There was no submerged vegetation in water depths over 3 feet. The percent coverage for the western one-third of the lake is approximately 25%, not including the solid mat at the far west end. Only about 5% of the shoreline along the rest of the lake has any aquatic vegetation other than filamentous algae. Other than the extremely shallow west end, vegetation is very sparse in the lake, with the entire lake having between 5%- 10% of both submerged and emergent vegetation. L.D.W.F. had sprayed for nuisance plants on within the past 60 days.

Chatham Lake – Aquatic Vegetation Survey – 2011

A survey of the aquatic vegetation on Chatham Lake was performed on 4-8-11. At the time of the survey, a mixture of submerged vegetation consisting primarily of bladderwort, fanwort, slender naiad, and coontail was found out to depths of 3 to 4 feet covering an area estimated at 40 acres. A fringe of emergent vegetation consisting primarily of red ludwigia was found along the shoreline of the lake, and the emergent vegetation extended out onto shallow flats in several areas, notably the upper end of the lake and around the fishing pier on the lower end of the lake.

In 2011, herbicide treatments were made on three occasions for salvinia control on Chatham Lake. Diquat was used at a rate of 0.75 gal per acre in addition to 1qt of surfactant comprised of 3 parts Aquaking and 1 part Thoroughbred. During an August 2011 assessment, there were minimal amounts of salvinia on the lake, but approximately 40% coverage of submerged vegetation was present.

Chatham Lake had undergone a complete drawdown for renovation purposes in 2007 which was

preceded by a partial dewatering of the lake in 2004 for habitat improvement. It is apparent that drawdowns will only provide short term control of the submerged aquatic vegetation in the shallow areas of the lake. Approximately 50% (75 acres) of Chatham Lake has water depths less than 4 feet deep. This area is usually covered annually by submerged aquatic vegetation.

Chatham Lake – Aquatic Vegetation Survey – 2013

A survey of the aquatic vegetation on Chatham Lake was performed on 1-23-13. At the time of the survey a fringe of common salvinia *(Salvinia minimum)* approximately 2-3 feet wide was surrounding the majority of the shoreline on the lake. This would cover an area approximately 3-5 acres in size.

At the time of the survey in January 2013, submerged aquatic vegetation was sparse. Coontail and southern naiad were present. Aquatic vegetation coverage on Chatham Lake was estimated at less than 10%. Common salvinia was the main component of aquatic vegetation on Chatham Lake.

A second assessment was conducted on 10/14/13. Common salvinia coverage had increased to 10-15 acres and was primarily located in the extreme upper end of the lake. Submerged aquatic vegetation consisted of fanwort, coontail, and naiad species. Coverage of SAV was light in the center of the lake and generally represented good fisheries habitat. Vegetation densities increased near the shore where submerged vegetation was combined with fringe of emergent and floating plants. Species included primrose, aligatorweed, hyacinths, and common salvinia. Vegetation densities have remained fairly consistent on Chatham Lake for the past three growing seasons with the exception of the late summer increases in common salvinia. Approximately 40% of Chatham Lake contained aquatic vegetation, but much of it was light in coverage and can be viewed as a benefit for fisheries production.